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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/525,098	02/17/2005	Kinji Kayanuma	Q86297	5623

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EXAMINER	
HEYI, HENOK G	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/525,098	KAYANUMA, KINJI	
	Examiner	Art Unit	
	HENOK G. HEYI	2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 June 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *02/17/2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *02/17/2005, 02/15/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 06/18/2008 have been fully considered but they are not persuasive. Applicant's argument that asserts the combination of the references Nakamura and Saga does not disclose or suggest a prepit forming regions having a fixed length which is three or less tracks long along a radial direction and being disposed not adjacent to one another in said radial direction is wrong. Nakamura teaches a track which is in the form of concentric circles or a spiral on the disk that has prepits with length P1 and P2 and space between them (see para [0088] and [0089]). As it could be seen from Fig. 1 or Fig. 6, the length of the prepits is less than three tracks long.

In regards to applicant's argument about the interpretation of the words "deforming" and "disconnection", is solely based on the claim language applicant used in clams 5 and 6. What applicant claimed is that prepits are formed by deforming groove side walls which is clearly taught by Yamagami (see col 7 lines 60-67 and col 11 lines 43-46). Regarding applicants last argument about the reference not teaching a mark or space recorded on a prepit, applicant is advised to refer to para [0013] of Nakamura that states Each identifier may include one or more prepits or marks provided on the optical recording medium and/or one or more spaces provided on the optical recording medium.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art

are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 1- 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura et al. US 2003/0076758 A1 (Nakamura hereinafter) in view of Saga et al US 2002/0041553 A1 (Saga hereinafter).

Regarding claim 1, Nakamura teaches an optical recording medium (see Fig. 1) comprising: a plurality of grooves concentrically or spirally arranged from a radially inner periphery toward a radially outer periphery of the medium (110A, 110B, 110C, 110D), a plurality of lands each disposed between two of said grooves adjacent to each other in a radial direction of the medium(109), a plurality of recording tracks each disposed in said groove and/or said land (112), and a plurality of prepit forming regions disposed in said groove and/or said land and each capable of receiving therein a single or a plurality of prepits (each identifier may include one or more prepits or marks provided on the optical recording medium and/or one or more spaces provided on the optical recording medium, see col [0013]) but Nakamura fails to teach explicitly the said plurality of prepit forming regions are disposed apart from one another by a distance which is 300 or more times a recording channel bit length: each of said prepit forming regions having a fixed length which is 36 or less times said recording channel bit length along said groove or land , said prepit forming regions having a fixed length which is three or less tracks long along said radial direction and being disposed not adjacent to one another in said radial direction. However, Nakamura teaches that the space between prepits has a length eight times the detection window width, 8Tw (see para [0014] to para [0015]). Saga also teaches the channel bit

length, L = vT, where T=2Tw and v is a motion speed of a laser speed light. By adjusting the motion speed it is obvious to achieve the claimed distance between the prepits. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the space between the prepits to a desired length. The motivation for combining these teachings is both channel bit length and detection window width that are taught by both Nakamura and Saga describe space length between prepits.

Regarding claim 2, Nakamura teaches the optical recording medium according to claim 1, wherein said recording track and said prepit forming region are disposed in each of said groove and said land (Each of the land sectors 109A, 109B, 109C, and 109D includes an identification information portion 111 and a recording and reproduction portion 112. Each of the groove sectors 110A, 110B, 110C, and 110D includes an identification information portion 111 and a recording and reproduction portion 112, see para [0051] and para [0052]).

Regarding claim 3, Nakamura teaches the optical recording medium according to claim 1 or 2, wherein said medium includes a plurality of zones divided in said radial direction, and said prepit forming regions in each of said zones are arranged, in alignment with one another in said radial direction, at a cycle corresponding to a specified number of recording tracks, along a plurality of lines which divide said medium by an integer in a circumferential direction of said medium (the optical recording medium may include a plurality of zones having different numbers of identification information portions provided in a track round, see para [0027]).

2. Claims 4-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura in view of Saga and further in view of Yamagami et al. US 6,256,282 B1 (Yamagami hereinafter) and Miyamoto et al US 2003/0053403 A1 (Miyamoto hereinafter).

Regarding claim 4, Yamagami teaches the optical recording medium according to claim 1, wherein said medium includes said plurality of zones divided in said radial direction (see Fig. 32), but Yamagami fails to teach wobbles that are in-phase with one another. However, Miyamoto teaches adjacent wobbles are in phase (see para [0035]). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the optical recording medium of Yamagami to have wobbles that are in phase. The motivation for combining these teachings is it is well known in the art grooves are wobbled with a signal obtained by frequency-modulation.

Regarding claim 5, Yamagami teaches the optical recording medium according to claim 1, wherein said prepits in said prepit forming region are formed by deforming groove side walls (the side wall of the pre-groove is wobbled, see col 1 lines 20-23).

Regarding claim 6, Yamagami teaches the optical recording medium according to claim 1, wherein said prepits in said prepit forming region are formed by disconnection of said grooves (as a result of the cutting apparatus, the right and left side walls of the groove 2 of the disk 1 are formed (wobbled) in correspondence with the wobble signal formed by the frequency modulation, see col 13 lines 47-50).

Regarding claim 7, the optical recording medium according to claim 1, wherein said prepit in said prepit forming region is formed as an emboss provided on said land (the embossed pits are arranged also on the centerline of the land track, see para [0042]).

Regarding claim 8, Yamagami teaches the optical recording medium according to claim 1, wherein said prepit forming region is provided, in number of one at most for each frame forming a unit of data arranged on said recording track, at a specified position of said each frame (One track has a plurality of wobbling address frames, col 8 line 16).

Regarding claim 9, Yamagami teaches the optical recording medium according to claim 8, wherein the number of frames per said recording track is an integer, and said prepit forming regions are intermittently disposed in said frames so that one of two of said recording tracks formed on respective said lands sandwiching therebetween one of said grooves, or formed on respective said grooves sandwiching therebetween one of said lands, includes therein said prepit forming region in one of said frames, whereas the other of said two of said recording tracks includes therein no prepit forming region in said one of said frames.

3. Claims 10-17 rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura in view of Saga and further in view of Yamagami and Miyamoto as applied to claim 8 above, and further in view of Ito et al. US 2002/0136134 A1 (Ito hereinafter).

Regarding claim 10, Yamagami teaches the optical recording medium according to claim 8, wherein said recording track has a wobble cycle (col 7 lines 64) but Yamagami failed to teach that the wobble cycle is equal to 1/n of a frame cycle. However, Ito teaches that 8 wobble cycles equals to one frame cycle (see para [0012]). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the optical recording medium of Yamagami to have frame cycles that are integer multiples of

wobble cycles. The motivation for combining these teachings as taught by Yamagami is the wobble cycle is predetermined as needed for best results.

Regarding claim 11, Yamagami teaches the optical recording medium according to claim 1, wherein a prepit array including at least one prepit and formed in said prepit forming region is recorded so as to provide part of physical address information or subsidiary information of said medium (the side wall of the pre-groove is wobbled is response to the address information, Col 1 lines 20-24).

Regarding claim 12, Yamagami teaches the optical recording medium according to claim 4, wherein a single prepit is formed in each said prepit forming region, and is recorded so as to provide part of physical address information or subsidiary information of said medium based on a relative relationship between the wobble phase and the prepit position (each wobbling address frame serving as each segment (segment 0 to segment 7) has a structure shown in FIG. 9, col 8 lines 34-35).

Regarding claim 13, Nakamura and Saga teach a method for recording data on the optical recording medium according to claim 1, said method comprising the step of recording a pattern including a long mark or a long space having ten or more times said channel bit length so that said prepit on said recording track is covered with said long mark or long space on said prepit forming region (see Nakamura para [0014] to para [0015] and Saga para [0037]) Nakamura teaches that the space between prepits has a length eight times the detection window width, 8Tw while Saga teaches the channel bit length, L = vT, where T=2Tw and v is a motion speed of a laser speed light. By adjusting the motion speed it is obvious to achieve the claimed distance between the prepits. Therefore, it would have been

obvious to one of ordinary skill in the art at the time the invention was made to modify the space between the prepits to a desired length. The motivation for combining these teachings is both channel bit length and detection window width that are taught by both Nakamura and Saga describe space length between prepits.

Regarding claim 14, Nakamura and Saga teach a method for recording data on the optical recording medium according to claim 1, said method comprising the step of recording a pattern including a long mark or a long space having ten or more times said channel bit length so that said prepit on one of said recording tracks is covered with said long mark or long space and so that an adjacent region in the adjacent track of said prepit forming region is covered with said long mark or long space (see Nakamura para [0014] to para [0015] and Saga para [0037]) Nakamura teaches that the space between prepits has a length eight times the detection window width, 8Tw while Saga teaches the channel bit length, L = vT, where T=2Tw and v is a motion speed of a laser speed light. By adjusting the motion speed it is obvious to achieve the claimed distance between the prepits. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the space between the prepits to a desired length. The motivation for combining these teachings is both channel bit length and detection window width that are taught by both Nakamura and Saga describe space length between prepits.

Regarding claim 15, Nakamura and Saga teach a method for recording data on the optical recording medium according to claim 3, said method comprising the step of covering said prepit on one of said recording tracks with said long mark or long space, and recording a pattern including a long mark or a long space having ten or more times said channel bit

length on an area which is aligned with said prepit forming region in said zone and includes therein no prepit forming region(see Nakamura para [0014] to para [0015] and Saga para [0037]) Nakamura teaches that the space between prepits has a length eight times the detection window width, 8Tw while Saga teaches the channel bit length, L = vT, where T=2Tw and v is a motion speed of a laser speed light. By adjusting the motion speed it is obvious to achieve the claimed distance between the prepits. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the space between the prepits to a desired length. The motivation for combining these teachings is both channel bit length and detection window width that are taught by both Nakamura and Saga describe space length between prepits.

Regarding claim 16, Yamagami teaches a recording unit for recording data on the optical recording medium according to claim 1, said recording unit comprising: a prepit detecting section for detecting a prepit signal from a signal reproduced from the optical recording medium(the side wall of the pre-groove is wobbled is response to the address information, Col 1 lines 20-24).; a decoding section for decoding said prepit signal to output physical address information(the side wall of the pre-groove is wobbled is response to the address information, Col 1 lines 20-24).; a recording pattern generating section for admixing, based on data to be recorded, a recording pattern including a long mark or a long space having a length ten or more times said channel bit length to said data to be recorded, to generate physical address information(the side wall of the pre-groove is wobbled is response to the address information, Col 1 lines 20-24).; and a recording timing control section for detecting a recorded position based on said physical address information, and

controlling timing for start of a recording pattern output from said recording pattern generating section and a channel bit frequency, wherein said recording timing control section controls output timing of said recording pattern so that said long mark or said long space output from said recording pattern generating section covers said prepit.

Regarding claim 17, Nakamura teaches a recording unit for recording data on the optical recording medium according to claim 1, said recording unit comprising: a wobble detecting section for detecting a wobble phase from a signal reproduced from the optical recording medium; a prepit detecting section for detecting a prepit signal from a signal reproduced from said t optical recording medium(each identifier may include one or more prepits or marks provided on the optical recording medium and/or one or more spaces provided on the optical recording medium, see col [0013]); Yamagami teaches a decoding section for decoding said prepit signal to output physical address information(the side wall of the pre-groove is wobbled is response to the address information, Col 1 lines 20-24).; a recording pattern generating section for admixing, based on data to be recorded, a recording pattern including a long mark or a long space having a length ten or more times said channel bit length to said data to be recorded, to generate physical address information(the side wall of the pre-groove is wobbled is response to the address information, Col 1 lines 20-24).; and a recording timing control section for detecting a recorded position based on said physical address information(the side wall of the pre-groove is wobbled is response to the address information, Col 1 lines 20-24)., and controlling timing for start of a recording pattern output from said recording pattern generating section and a channel bit frequency, based on said wobble phase output from said prepit detecting section and/or said prepit signal output from

said prepit detecting section, wherein said recording timing control section controls output timing of said recording pattern so that said long mark or said long space output from said recording pattern generating section covers said prepit.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HENOK G. HEYI whose telephone number is (571)270-1816. The examiner can normally be reached on Monday to Friday 8:30 to 6:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Korzuch can be reached on (571) 272-7589. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/TAN Xuan DINH/
Primary Examiner, Art Unit 2627
September 10, 2008

/Henok G Heyi/
Examiner, Art Unit 2627